EXHIBIT 30

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Subsidies, Hierarchy and Peers: The Awkward Economics of Higher Education

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Higher education is a business: it produces and sells educational services to customers for a price and it buys inputs with which to make that product. Production is subject to technological constraints. Costs and revenues discipline decisions and determine the long-run viability of a college or university. ''But higher education is not just a business.'' While that statement is often meant to imply that higher education is nobler than business—more decent and humane in the purposes it serves—it can also mean that even in economic terms higher education is, in important ways, simply different from a business.

This paper asks how well our extensive experience with commercial businesses—and the microeconomic theory of firms and markets that has evolved to describe them—helps in understanding the economics of higher education. That experience and those insights will be used by trustees, politicians, administrators, lawyers, reporters and the public, as well as by economists, to understand and evaluate the behavior of colleges and universities. So it is useful to ask how safe it is to use ''the economic analogy'' in the context of higher education, drawing parallels between universities and firms, students and customers, faculty and labor markets, and so on. The discussion here seeks to identify the key economic features of higher education that make it different from familiar for-profit industries and to ask what difference those differences make.

This is a stick that can be picked up from either end. One approach is to start with meticulous economic theory and see how far it can be made to encompass the economic realities of higher education. An excellent recent paper by Rothschild and White (1995) does that. In their matching model, students and colleges meet

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for instance, colleges relied only on commercial resources—on sales proceeds—they would all compete in the market under the same conditions of success and survival. A similar sort of balanced competition would arise if donative revenues per student were equal at all schools; in this situation, competition might bid price-cost ratios to equality, though less than one, across the market. Or if colleges were always price-takers in the markets for education and for student quality, they would not restrict supply to generate excess demand and select their students on quality. But none of this appears to be the case.

Four particular market characteristics seem most important. All schools in the market sell below cost, subsidizing their customers. Because different schools have very different access to donative resources to support those subsidies, they fall into a sharply differentiated subsidy hierarchy. Because schools use a customer-input technology with a strong feedback through demand to reinforce student quality, the hierarchy based on donative wealth becomes highly skewed. A school's position, vis-à-vis its competition, both signifies its ''excellence'' and affects its ability to attract scarce student quality. This section discussion how these characteristics affect the disciplinary pressures of market competition.

Hierarchy and the Positional Nature of Success

The higher education market is strongly hierarchical with firms differentiated initially by their access to donative resources—the subsidy rankings of Table 1—and what those resources will buy. The hierarchy that starts with differential access to donative resources is then amplified by the feedback from those resources to institutional quality to student quality to demand to selectivity to greater student quality, along the lines already laid out. At the top of the hierarchy are the schools well-endowed with donative wealth—large endowments and expensive plants in the case of private schools and, additionally, large government subsidies in the case of public schools—that offer expensive and high quality education at highly subsidized prices and that therefore disproportionately attract high quality students, and employ an educational technology to take advantage of those students. Movements down the hierarchy bring less of student quality and more use of methods of educational production that don't so much rely on peer quality. Movement down the hierarchy, too, means less of excess demand until schools encounter increasing problems of selling the product at all—from an excess demand at the top that controls quality, to near market-clearing demand in the middle where quantity and quality trade off, to excess supply and empty classroom seats and dormitory beds at the bottom. Strategies to augment demand—like increased reliance on distance learning or foreign or older students or vocational curricula—become crucial for schools with less donative wealth.

With institutions in highly differentiated circumstances, the positional nature of much academic success and the role of emulation, status, and relative prestige become especially important in motivating institutional behavior. At the top are the schools with the largest donative resources that set standards for emulation across the market. But while that wealth establishes the targets of emulation, it also